

U.S. Patent Application Serial No.: **10/568,420**

Amendment filed December 5, 2011

Reply to OA dated July 6, 2011

REMARKS

Claims 1-7 and 11-18 are pending in this application. Claims 15-18 are canceled without prejudice or disclaimer, and claims 1, 11 and 12 are amended herein. Upon entry of this amendment, claims 1-7 and 11-14 will be pending. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment. Support for the amendments to the claims is detailed below.

Claims 11 and 12 are objected to, as being of improper dependent form for failing to further limit the subject matter of a previous claim. (Office action paragraph no. 3)

The objection is overcome by the amendments to claims 11 and 12. Claim 11 has been amended to depend from claim 1 and claim 12 has been amended to depend from claim 2.

Claims 1-7 and 11-14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Gozdz et al. (U.S. 2005/0233219 A1) in view of Yoshino et al. (U.S. 5,631,100 A) and Okawa et al. (US 2002/0106564 A1) as evidenced by Timcal (SUPER P Technical Data Sheet). (Office action paragraph no. 5)

Reconsideration of the rejection is respectfully requested in view of the amendment to claim 1.

Claim 1 has been amended to recite that: “the positive electrode active material-containing layer has a mean surface roughness Ra of greater than 0.026 μm and smaller than 0.20

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μm.” Support for this amendment may be found, for example, at page 28, lines 6-17, of the specification.

Claim 1 has also been amended to recite that: “the conductive agent has BET specific surface area of [[15]] 70 m²/g or greater.” Support for this amendment may be found in the specification, for example, in Example 1 of the Second Embodiment, at page 29, line 17. (See Table 3 on page 34).

As shown in Table 3 of the present application, when the BET specific surface area of the conductive agent is 70 m²/g or greater, discharge capacity at discharge current rates of 2.0 improves. On the other hand, Gozdz does not describe nor suggest that the lower limit value of the BET specific surface area of the conductive agent is 70 m²/g or greater. It should be noted that according to the cited reference Timcal, the BET specific surface area of Super P, which Gozdz describes at [0085], is 62 m²/g. Accordingly, it is not obvious to restrict the BET of the conductive agent to 70 m²/g or greater by referring to Gozdz.

Yoshino discloses an invention which relates to a positive electrode active material having layered structure such as LiCO₂, and differs from the present invention which uses a positive electrode active material having olivine structure. As described in the specification of the present application at [0009], the positive electrode active material having olivine structure has a problem of low degree of adherence with the positive electrode current collector, whereas the positive electrode active material having layered structure such as LiCoO₂ is free of such a problem. As such, just because Yoshino discloses a preferable range of the surface roughness of the current collector from 0.1 to 0.9 μm as described at column 5, lines 33-45, it does not follow that one of ordinary skill can necessarily improve adherence of a positive electrode active

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material having olivine structure with the positive electrode current collector. Furthermore, Yoshino discloses not only a preferable range of the surface roughness of the current collector from 0.1 to 0.9 μm , but also a more preferable range of from 0.6 to 0.8 μm as described at column 5, lines 40-41. Therefore, one of ordinary skill would restrict the surface roughness of the current collector to 0.6-0.8 μm and could not be motivated to restrict the range to $0.026\mu\text{m} < \text{Ra} < 0.20\mu\text{m}$. Accordingly, it is not obvious to restrict the surface roughness of the current collector to $0.026\mu\text{m} < \text{Ra} < 0.20\mu\text{m}$ in a positive electrode comprising a positive electrode active material having olivine structure by referring to Yoshino.

From the foregoing above, it is not obvious over Gozdz to restrict the BET of the conductive agent to $70\text{ m}^2/\text{g}$ or greater, nor is it obvious over Yoshino to restrict the surface roughness of the current collector to $0.026\mu\text{m} < \text{Ra} < 0.20\mu\text{m}$, and accordingly, it is evidently unobvious to reach the present invention by combining Gozdz, Yoshino and Okawa.

Claims 15-18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Gozdz et al. (U.S. 2005/0233219 A1) in view of Okawa et al. (US 2002/0106564 A1) as evidenced by Timcal (SUPER P Technical Data Sheet). (Office action paragraph no. 6)

The rejection is moot in view of the cancellation of claims 15-18 without prejudice or disclaimer.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Petition for Extension of Time